

STONE AGE BRAINS IN 21C SKULLS

A Brief Introduction to Behavioural Economics

If a geneticist looked at your genes and then at mine she would tell us that we have a common ancestor from about 100,000 years ago. Back then our ancestor's brain spent a lot of time processing information about food: where to find it, and how not to become food for something else. That helped survival. The same brain also spent a lot of time processing information about other people. Were they friends, foes, or potential mates? That helped pass on genes. Furthermore, the ancestor's brain had to process this incomplete information quickly and act on the results.

Fast forward to 2002. In that year the psychologist, Daniel Kahneman, won the Nobel Prize for Economics *for having integrated insights from psychological research into economic science, especially concerning human judgment and decision-making under uncertainty.*

Today the field that Kahneman and his colleagues pioneered is referred to as behavioural economics. It is important for businesses and governments because it torpedoed many plausible, common-sense, and incorrect assumptions that economists, business people and politicians had been making about how the public, consumers and citizens make reach decisions and make choices.

Classical Economics

We are rational decision makers
Most of our decision making is conscious
We are analytical and calculating
We discount in a time-consistent manner
Our decision making is consistent
We maximise self-interest

Behavioural Economics

We are non-rational (not irrational*) decision makers
Most of our decision making is sub-conscious
We are emotion-based and intuitive
We discount in a time-inconsistent manner
Our decision making is inconsistent
Self-interest includes a social dimension



At one level all brains are similar. Facial expressions for anger, disgust, fear, joy, sadness and surprise seem universal. Under the skull, the frontal lobes are used in planning, the limbic system helps to regulate emotion, and Broca's area is linked to speech production. At this level Stone Age brains and 21C brains are essentially the same.

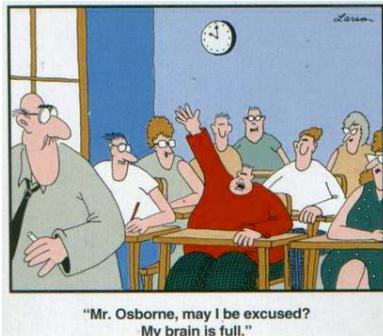
At another level, though, brains vary considerably. This is where culture makes its presence felt. (Consider, for example, how different cultures today, or through history, view the role of women). So in this regard Stone Age brains and 21C brains are rather different. And at a third level there are the brain circuits that make you, YOU.

So when we're thinking about other people, what 'brain level' is applicable? The biological, the cultural, or the individual?

When it comes to behavioural economics we are dealing primarily, if not exclusively, with the biological basis of the brain. The key notions here are (i) System 1 and System 2 thinking; (ii) Heuristics and cognitive biases; (iii) Multiple selves; (iv) Choice architecture ('nudging'); (v) Context.

(1) SYSTEM 1 and SYSTEM 2 THINKING

Among his many accomplishments, Nobel laureate Herbert Simon introduced the notion of **bounded rationality**. This is the idea that when we make decisions, our rationality is limited by the information we have, the cognitive limitations of our minds, and the time available to make the decision. This may seem obvious but until Simon drew economists' attention to this the conventional wisdom was that we were rational decision makers with time on our hands.



Many of the decisions we make are similar to, or the same as, decisions we've made before: what clothes to wear, what route to take to work or to the shops, how to make a cup of coffee. We make thousands of such 'micro-decisions' each day and many become the basis of habits. This helps us make good use of valuable brain resources. This decision making system (what Kahneman called **System 1**) is subconscious, fast, effortless, and intuitive. We use it about 95% of the time. Most of the time it works well but it can let us down when we're dealing with something new and/or complicated. This is when **System 2** is more

appropriate. System 2 is conscious, slow, effortful, and calculating. In living-everyday-life mode we use it rarely: about 5% of the time. But in 'organisation mode' we use it regularly: in making plans, drawing up budgets, setting objectives and using key performance measures (KPIs), for example. The trap is that we carelessly assume that consumers will use System 2 thinking when making decisions about our products and services – as we did when thinking about them – when, in fact, they will almost certainly be using System 1. This leads us nicely into the next item.

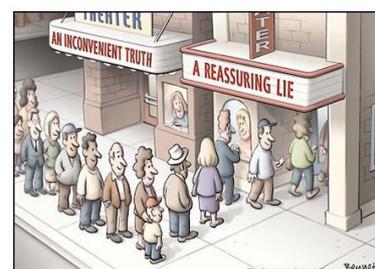
(2) HEURISTICS and COGNITIVE BIASES

Faced with a need to make decisions in an environment characterised by incomplete information, uncertainty, and time pressure our brains subconsciously resort to shortcuts. These are called **heuristics**. They are biological algorithms. Imagine that you had to come up with a set of rules that distinguished male from female faces. The chances are that you'd get the correct result most of the time but not always. But to get the decision-making perfect would take a disproportionate amount of additional time and effort. So most of the time 'good enough' is okay.

The **Availability Heuristic**, for example, is a mental shortcut that uses images and memories that come readily to mind: i.e. they are readily *available*. The terrorist attacks such as the 7/7 bombings in London or 9/11 in New York are good examples. Because we can readily recall these memories we have a tendency to view similar events as more likely than in fact they are. This helps us be vigilant. It also encourages many of us to be more anxious than is warranted.

Similar to heuristics are **cognitive biases**. (The use of the word '*biases*' is unfortunate because we tend to see it as a value judgement rather than a neutral description. Consider handedness. Being right handed is a bias but it is neither good nor bad. It simply is.) A cognitive bias is the result of a subconscious tendency to simplify a complicated world and reach decisions (that work for us) with relative speed. Here are three examples of cognitive biases:

1 The Confirmation Bias refers to our tendency to search for, interpret, favour, and recall information in a way that confirms our beliefs while giving disproportionately less attention to information that contradicts them. The shortcomings of a such bias are not difficult to figure out, but step back and make the case for the benefits of such a 'flawed' system and you'll begin to see why this bias persists. Having confidence in our judgements, for a while at least, helps us manage the world we live in.

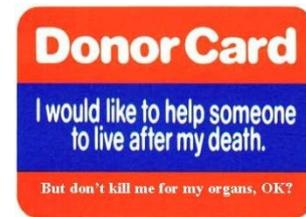




2 The Optimism Bias refers to our tendency to be unrealistic about the future. We underestimate our chances of getting divorced, losing our job or being diagnosed with cancer. We overestimate our sense of humour and our attractiveness to others. The bias may mean that we save too little, spend too much and take risks with our health. But the bias also protects and inspires us. Would having a child pass a costs-and-benefits test? Probably not. But this isn't how people approach the possibility of parenthood. Without this built-in bias our

ancestors would not have tried out new food sources or ventured far from their tribes. We would still be cave dwellers, huddled together dreaming of light and heat.

3 The Status Quo bias refers to our (subconscious) tendency to stick with what we know and avoid change. (This also ties in to notions of *loss-aversion* and *defaults*.) Organ donor programmes are often cited as an example of the status quo bias. In countries where the status quo is 'presumed consent' you have to actively opt out if you do not want to be an organ donor. In these circumstances about 80% of people are organ donors. In countries where the status quo is 'active consent' (i.e. donors have to make an active decision to be an



an organ donor and expend effort to get on the register) about 20% are organ donors. In the UK, the status quo bias underpins the auto-enrolment default for personal pensions and we've seen a significant increase in the number of people who are members of such schemes.

(3) MULTIPLE SELVES

What are you like? Careful with money or penny-wise-pound-foolish? What type of spending makes you anxious and what type makes you happy? The point here is that there isn't a single YOU. In research by The Open University and UCL for The BBC Big Money Test it emerged that we had **multiple selves** when it came to how we dealt with money. The different personas inside each one of us comprised bargain hunter, gambler, miser, shopper and tycoon. Under different circumstances a different persona steps forward.

In his book *Thinking, Fast and Slow* Daniel Kahneman takes a slightly different tack. He talks about **two selves**: the experiencing self and the remembering self and notes that we have difficulty distinguishing between memories and experiences. Indeed, each time we recall a memory it is (subconsciously) changed as it fits in to whatever narrative is being used at the time. This matters because the experiencing self does not have a voice: it is the remembering self that 'keeps score' and influences our decision making.

(4) CHOICE ARCHITECTURE ('Nudging') and BEHAVIOUR CHANGE

In 1948 82% of UK men and 41% of women were smokers. In 1950 Richard Doll and Austin Bradford Hill published a paper in The British Medical Journal making a link between smoking and lung cancer. First of all they encountered resistance, not only from the tobacco companies but also from the medical profession. A few years later Government accepted the research findings but chose not to act.

Later, 'common sense' measures were taken to reduce the incidence of smoking. But, even for those who wished to reduce their habit or quit altogether, nagging campaigns had little or no effect. Health warnings on cigarette packets? Ditto. Lurid images on cigarette packets of smoking related gum disease or gangrene also had little or no effect. But today, the incidence of smoking in the UK is about 20% for men and a similar percentage for women. What happened? We've changed the context. Because smoking is banned from airports, pubs, restaurants and most public places, there are no

subconscious messages saying to smokers "It is time to light up a cigarette". This makes it easier for smokers to reduce the habit (if they wish to) and is an example of **choice architecture**.



We do not make choices in a vacuum. Many features, noticed and unnoticed, can influence our decisions. Richard Thaler introduced the term Choice Architecture to describe the external tools that are available to 'nudge' us towards better decisions (as judged by ourselves).

This Simpson cartoon illustrates the extent to which choice architecture has become mainstream. And if you want another everyday example ask yourself why supermarkets put sweets at the level of a child's eye at the checkouts.

The publication of the MINDSPACE report in 2010 by The Cabinet Office brought 'nudging' to the attention of the media, regulators and some corporations. (MINDSPACE refers to nine levers of choice architecture: **M**essenger, **I**ncentives, **N**orms, **D**efaults, **S**alience, **P**riming, **A**ffect, **C**ommitment, and **E**go.) Government has typically used tools such as legislation, regulation or taxation to achieve desired policy outcomes. But many of the biggest challenges we have today require different and more sophisticated types of response. The lesson here is deceptively simple and frequently overlooked **if you want to change behaviour change the context** (not the person). This takes us to our final point.

(5) CONTEXT

Brains perceive probability and risk based on experiences we've had and beliefs we hold. (This is rather different to the way that most statisticians and actuaries in System 2 mode, for example, view probability and risk). Rather than process information consistently based on some sort rule book, brains process information based on context.



This well-known example illustrates the point. If people were shown the 12, 13 and 14 only nobody would see a 'B'. Similarly, if people were shown the A, B and C only nobody would see a 13. This is important because corporations, governments and regulators, (using System 2 thinking) frequently seek to influence us based on *rules* (which are context independent). They pay insufficient attention to System 1 thinking and the importance of context. (Consider how we process notions of fairness-and-justice, for example, or poverty.)

THE BOTTOM LINE

"Common sense is the collection of prejudices acquired by the age of eighteen", is a quotation that is attributed to Einstein. It is a good way to conclude this briefing. Much of what you will have read here will have seemed unremarkable. Obvious even. But it's not common sense because it's not common. In the financial services sector it is not mainstream thinking. And that begs the question, **"If all of this behavioural economics stuff is so obvious how come we're not using it that well?"**